

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended): A functionalized sheet extrudate (X) that has self-cleaning properties and has n total layers,

wherein the functionalized sheet extrudate (X) is a polymer sheet extrudate (PS) which is a single layer, functionalized by direct embedding of at least one securely anchored layer of microparticles (P) which have hydrophobic properties and have from primary particles combined to give agglomerates or aggregates whose size is from 0.2  $\mu\text{m}$  to 100  $\mu\text{m}$ , which form elevations having an average height of from 20  $\mu\text{m}$  to 25  $\mu\text{m}$  and an average separation of from 20 nm to 25  $\mu\text{m}$ , wherein the at least one securely anchored, directly embedded layer of microparticles (P) has been directly anchored into the polymer surface of the polymer sheet extrudate (PS) and has not been linked to the polymer sheet extrudate (PS) by a carrier material, and wherein the total number of layers (n) in the functionalized sheet extrudate (X) is equal to the sum of the number of securely anchored, directly embedded layers of microparticles (P) + 1 ( $n = \Sigma P + 1$ )

~~A sheet extrudate with at least one surface which has self-cleaning properties,~~

~~-wherein~~

~~a synthetic polymer surface of the sheet extrudate (X) has at least one securely anchored layer of microparticles (P) which have hydrophobic properties and have from primary particles combined to give agglomerates or aggregates whose size is from 0.2 to 100  $\mu\text{m}$ , which form elevations having an average height of from 20 nm to 25  $\mu\text{m}$  and an average separation of from 20 nm to 25  $\mu\text{m}$ , where the microparticles (P) have been directly anchored within the synthetic polymer surface of the sheet extrudate (X) and have not been linked via a carrier material.~~

2. (Original): The sheet extrudate as claimed in claim 1,

wherein

the elevations have an average height of from 50 nm to 4  $\mu$ m and/or an average separation of from 50 nm to 4  $\mu$ m.

3. (Currently Amended): The sheet extrudate as claimed in claim 1 ,

wherein

the microparticles ~~have been~~ are selected from particles of: silicates, minerals, metal oxides, metal powders, silicas, pigments, [[or]] polymers, or combinations thereof.

4. (Currently Amended): The sheet extrudate as claimed in claim 1,

wherein

the microparticles ~~have been~~ are selected from particles of: fumed silicas, precipitated silicas, aluminum oxide, mixed oxides, doped silicates, titanium dioxides, [[or]] pulverulent polymers, or combinations thereof.

5. (Currently Amended): The sheet extrudate as claimed in claim 4,

wherein

the microparticles [[are]] comprise hydrophobicized fumed silicas.

6. (Previously Presented): The sheet extrudate as claimed in claim 1,

wherein

the sheet extrudate itself comprises a material selected from polycarbonates, polyoxymethylenes, polyacrylates, polymethacrylates, polyamides, polyvinyl chloride,

polyethylenes, polypropylenes, aliphatic linear or branched polyalkenes, cyclic polyalkenes, polystyrenes, polyesters, polyacrylonitrile, polyalkylene terephthalates, and polyvinylidene fluoride, or comprises other polymers from polyisobutene, poly-4-methyl-1-pentene, and polynorbornene, in the form of homo- or copolymer, or else comprises a mixture of these.

7. (Previously Presented): The sheet extrudate as claimed in claim 1,

wherein

the microparticles have been anchored with from 10 to 90% of their average particle diameter within the surface.

8. (Currently Amended): A process for producing the functionalized sheet extrudate ~~extrudates~~ as claimed in claim 1, ~~with at least one surface which has self-cleaning properties and has elevations formed by microparticles,~~

which comprises

impressing the microparticles which have hydrophobic properties and have combined from primary particles to give agglomerates or aggregates whose size is from 0.2  $\mu\text{m}$  to 100  $\mu\text{m}$ , by means of a roll, into ~~[[the]]~~ at least one surface of ~~[[the]]~~ a melt of ~~[[a]]~~ the polymer sheet extrudate (PS), where this melt has not yet solidified, and where more than 50% of the microparticles are impressed only to the extent of 90% of their diameter into the at least one surface of the polymer sheet extrudate (PS).

9. (Currently Amended): The process as claimed in claim 8,

wherein

the polymer sheet extrudate (PS) comprises a polymer based on polycarbonates, on polyoxymethylenes, on polyacrylates, on polymethacrylates, on polyamides, on polyvinyl chloride, on polyethylenes, on polypropylenes, on aliphatic linear or branched polyalkenes, on cyclic polyalkenes, on polystyrenes, on polyesters, on polyacrylonitrile, or on polyalkylene terephthalates, or on polyvinylidene fluoride, or comprises other polymers from polyisobutene, poly-4-methyl-1-pentene, and polynorbornene, in the form of homo- or copolymer, or else comprises a mixture of these.

10. (Currently Amended): The process as claimed in claim 8,

wherein

the microparticles are impressed into the at least one surface of the polymer sheet extrudate (PS) by means of a roll for smoothing the polymer sheet extrudate (PS).

11. (Currently Amended): The process as claimed in claim 8,

wherein,

prior to impression into the polymer sheet extrudate (PS), the microparticles are applied to the surface of the roll used to impress the microparticles.

12. (Original): The process as claimed in claim 11,

wherein

the microparticles are sprayed onto the roll.

13. (Previously Presented): The process as claimed in claim 8,

wherein

the roll has a temperature of from 20°C to 150°C.

14. (Currently Amended): The process as claimed in claim 8,

~~wherein~~

~~use is made of comprising~~ at least two rolls, and ~~wherein the~~ hydrophobic microparticles are impressed into ~~[[the]]~~ two surfaces ~~surface~~ of the polymer sheet extrudate (PS) on two sides of the polymer sheet extrudate (PS).

15. (Currently Amended): The process as claimed in claim 8,

wherein the

~~use is made of~~ microparticles are selected from particles of: silicates, minerals, metal oxides, metal powders, silicas, pigments, ~~[[or]]~~ polymers, or combinations thereof.

16. (Currently Amended): The process as claimed in claim 15,

wherein

microparticles ~~composed of~~ comprise hydrophobicized fumed silicas ~~are used~~.

17. (Previously Presented): A film with a surface which has self-cleaning properties and has surface structures with elevations, produced by the process of claim 8.

18. (Previously Presented): A sheet with a surface which has self-cleaning properties and has surface structures with elevations, produced by the process of claim 8.

19. (Currently Amended): The functionalized sheet extrudate (X) as claimed in claim 2,

wherein

the microparticles ~~have been selected from~~ comprise particles of: silicates, minerals, metal oxides, metal powders, silicas, pigments, [[or]] polymers, or combinations thereof.

20. (Currently Amended): The functionalized sheet extrudate (X) as claimed in claim 2,

wherein

the microparticles ~~have been selected from~~ comprise particles of: fumed silicas, precipitated silicas, aluminum oxide, mixed oxides, doped silicates, titanium dioxides, [[or]] pulverulent polymers, or combinations thereof.